

BEKE, Denes, dr, prof. [deceased]; HARSANYI, Kalman, dr. (Budapest, V.,
Guszev u. 27); KOLODITS, Pal (Budapest, XI., Gellert ter 4)

On a new isoquinoline ring closure reaction. VI. Acta chimica
Hung 35 no.2:205-211 '63.

1. Institut fur Organische Chemie der Technischen Universitat,
Budapest.

KOLONITS, Palne; SZTANKOVICS, Laszlo

Certain factors affecting the properties of lacquer film
condensers. Hir techn 15 no. 1: 13-18 Ja '64.

1. Híradastechnikai Ipari Kutató Intézet.

KOLONITSKIY, A.T.

Effectiveness of application of DDT in the south. Med.paraz.
i paraz. bol.24 no.3:224-225 J1-S '55. (MLRA 8:12)

1. Zaveduyushchiy Leningradskoy oblastnoy protivomalyariynoy
stantsiyey.

(MALARIA, prevention and control,
in Russia, DDT)

(DDT,
in Malaria control in Russia)

KOLONITSKIY, A.T.; SHTOL'BERG, B.I.

Work of the daily helminthological infirmary. Zdrav. Tadzh. 7
no. 2:15-18 Mr-Apr '60. (MIRA 13:10)

1. Iz parazitologicheskogo otdeleniya (zav. - A.T. Kolonitskiy)
Leninabadskoy Oblastnoy sanepidstantsii (glavnyy vrach-
G.V. Rikhter).

(LENINABAD--WORMS, INTESTINAL AND PARASTIC)

KOLONITSKIY, A.T.

Incidence of cutaneous and visceral leishmaniasis in northern
Tajikistan. Zdrav.Tadzh. 9 no.5:25-28 '62. (MIRA 15:12)

1. Zaveduyushchiy otdelom Leninabadskoy mezhrayonnoy sanitarno-
epidemiologicheskoy stantsii.
(TAJIKISTAN--DELHI BOIL) (TAJIKISTAN--KALA-AZAR)

L 39019-66 EWT(1)/T JK

ACC NR: AP6029590

(A, N)

SOURCE CODE: UR/0358/66/035/001/0077/0082

AUTHOR: Lysenko, A. Ya.; Kalmykov, Ye. S.; Losev, O. L.; Kolonitskiy, A. T.

ORG: Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Mart inovskiy,
Ministry of Health SSSR, Moscow (Institut meditsinskoy parazitologii i tropicheskoy
meditsiny Ministerstva zdravookhraneniya SSSR); Dushanbe Institute of Epidemiology
and Hygiene, Ministry of Health Tadzhikistan (Dushanbinskiy institut epidemiologii i
gigiyeny Ministerstva zdravookhraneniya Tadzhikistan); Republic Sanitary Epidemiological
Station, Ministry of Health Tadzhikistan (Respublikanskaya sanepidstantsiya Ministerstva
zdravookhraneniya Tadzhikistan)

TITLE: Methods for checking the validity of data on malaria eradication (on the basis of experience in Northern Tadzhikistan)

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 35, no. 1, 1966, 77-82

TOPIC TAGS: mosquito, preventive medicine, disease control, blood disease

ABSTRACT: Spot checks to verify that malaria actually had been eradicated in Northern Tadzhikistan were carried out in 1963. Because this was the first study of this type conducted in the USSR, reliable criteria for the collection and evaluation of data had to be established. The study was carried out in a relatively isolated area in localities in which the danger of renewed outbreaks of malaria was greatest. It comprised investigations on the thoroughness of work done by

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UDC: 616.936-084.4-07

L 39019-66

ACC NR: AP6029590

local medical organizations and collection of data on the frequency of diseases accompanied by fever, the results of blood tests, and the occurrence of Anopheles mosquitoes and gambusia (fish which exterminate mosquito larvae). The results of the study indicated that malaria had actually been eradicated in Northern Tadjikistan. Measures to prevent possible outbreaks of malaria in the future are outlined which comprise lowering of the potential level of development of endemic malaria (prevention of the formation of bodies of water from this standpoint, breeding of gambusia, extermination of winged mosquitoes in localities into which the disease may be carried), maintenance of vigilance in the population and among medical workers, prevention of carrying in malaria from the outside, and eradication of foci of infection after the disease has been carried in. Orig. art. has: 1 figure. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: 17Feb65 / ORIG REF: 002 / OTH REF: 002

Card 2/211/LP

L 2173-66 EWT(1)/FCC GW
ACCESSION NR: AP5022924

UR/0362/65/001/009/0994/0995
551.510.42

18
B

AUTHOR: Manzhula, A. P.; Kolonitskiy, S. A.
44.55 44.55

TITLE: The precipitation velocity of particles in the atmosphere

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 9, 1965, 994-995

TOPIC TAGS: atmospheric precipitation, atmospheric density
12,44.55

ABSTRACT: Generally, the precipitation velocity of spherical particles in the atmosphere may be calculated from the formula

$$W = \frac{\mu}{2\rho r} \Phi(\alpha r^3),$$

where $\alpha = 4\rho\sigma g/9\mu^2$; μ and ρ are the viscosity and density of the atmosphere; σ , the density of the particle; r , its radius, and g the acceleration of gravity. The function $\Phi(\alpha r^3)$ may be approximated by

$$\Phi(\alpha r^3) = \frac{\alpha r^3}{1 + 1/\beta \sqrt{\alpha r^3}}.$$

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L 2173-66

ACCESSION NR: AP5022924

over a wide range of αr^3 values. The interpolation formula for the precipitation velocity is

$$W = \frac{W_{St}}{1 + 0.15 \sqrt{\alpha r^3}}$$

By substituting $\bar{W}_{St} = \frac{2}{9} \frac{\sigma g}{\mu} r^2$ (Stokes' formula) into (3), one obtains

$$W = \frac{2}{9} \frac{\sigma g}{\mu} r^2 \left(1 + 0.15 \sqrt{\frac{4}{9} \frac{\rho \sigma g}{\mu^2} r^3} \right)^{-1}$$

which permits the calculation of the precipitation velocity of particles from a given particle radius and density. Taking into account the change in the density and viscosity of air with the altitude, the authors derive formulas for the average precipitation velocity from height H_2 to H_1

$$\bar{W} = 0.25 \frac{\sigma g}{\mu_0} r^2 \left[1 + 0.112 \sqrt{\frac{\rho_0 \sigma g r^3}{11 \mu_0^2 (H_2 - H_1)}} (e^{-\gamma H_1} - e^{-\gamma H_2}) \right]^{-1}$$

and from height H_2 ($H_2 = H$) to the Earth's surface

$$\bar{W} = 0.25 \frac{\sigma g r^3}{\mu_0} \left[1 + 0.112 \sqrt{\frac{\rho_0 \sigma g r^3}{11 \mu_0^2 H}} (1 - e^{-\gamma H}) \right]^{-1}$$

Card 2/3

L 2173-66

ACCESSION NR: AP5022924

The relationships obtained may be applied to the determination of the average precipitation velocity of any spherical particles of a given density in any medium. Orig. art. has: 1 table and 9 formulas.

ASSOCIATION: None

SUBMITTED: 08Jan65

ENCL: 00

SUB CODE: ES

NO REF SOV: 001

OTHER: 000

Card 3/3 *dg*

KOLONIY, -V.

32729. Velikiy rusekiy uchyenyy i patriot. [I. P. Pavlov]. Oktyabr' (Kishinev), 1949, NO. 5, s. 90-94

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

KOLONIY, Vladimir Pantaleymonovich [Kolonyi, V.P.]; kand. biol. nauk; SHMATKO, Yu. G. [Shmatko, Yu. H.], kand. sel'skokh. nauk, red.; TUBOLEVA, M. V. [Tubolievs, M. V.], red.

[How a collective farm increases the output of livestock products; practices of the Shevchenko Collective Farm, Uman District, Cherkassy Province] Iak kolhosp sbil'shuie vyrobnytstvo tvarynnyts'koi produktsii; z dosvidu kolhospu im. Shevchenka, Umans'koho raionu, na Cherkashchyni. Kyiv, 1958. 37 p. (Tovarystvo dlia poshyrennia politychnykh snan' Ukrain'skoi RSR. Ser. 3, no. 11) (MIRA 12:2)
(Stock and stockbreeding)

GOLOVCHENKO, I., agronom.; KOLONIY, V., kand. biel. nauk.

Immediate future of our collective farm. Nauka i pered. op.
v sel'khoz. 9 no.2:5-11 F '59. (MIRA 12:3)

1. Predsedatel' kolchoza imeni Shevchenko, Umanskogo rayona,
Cherkasskoy oblasti, Ukrainskoy SSR (for Golevchenko).
(Collective farms)

POLULYAKH, Ya.; KOLONIY, V., kand.biol.nauk

We've reached our first goal. Nauka i pered.op.v sel'khoz.
9 no.11:5-6 M '59. (MIRA 13:3)

1. Pervyy sekretar' Umanskogo gorkoma Kommunisticheskoy
partii Ukrainy.
(Uman District—Stock and stockbreeding)

KOLONIY, Vladimir Panteleymonovich, kand.biolog.nauk; KLITSENKO, G.T.
[Klytsenko, H.T.], otv.red.; GURENKO, V.A. [Hurenko, V.A.], red.

[Ways of increasing livestock production; practices of the
"Pamiat' Lenina" Collective Farm, Cherkassy District, Cherkassy
Province] Na shliakhu zbil'shennia vyrobnytstva produktiv
tvarynnytstva; z dosvidu kolhospu "Pam'iat' Lenina" Cherkas'koho
raionu Cherkas'koi oblasti. Kyiv, 1960. 39 p. (Tovarystvo dlia
poshyrennia politychnykh i naukovykh znan' Ukrain's'koi RSR. Ser.6,
no.5). (MIRA 13:6)

(Cherkassy District--Stock and stockbreeding)

KOLONIY, V.P., kand. biolog. nauk

Effect of ammonia-rich feeds on the physiological state
of animals. Veterinariia 41 no.11:72-73 N '64.

(MIRA 18:11)

1. Umanskiy sel'skokhozyaystvennyy institut.

~~KOLONKO, N.~~; LEWANDOWSKI, Z.; MAKOWSKA-RZESZUTKO, M.; NIEWODNICZANSKI, H.;
WIKTOR, S.; WROBEL, Z.

Energy and angular distributions of the neutrons from the stripping
reaction $^{12}\text{C}(d,n)^{13}\text{N}$. Inst fiz jadr report no.200:1-15 J1 '62.

1. Instytut Fizyki Jadrowej, Krakow (for all except Wrobel).
2. Instytut Fizyki, Uniwersytet Jagiellonski, Krakow (for Wrobel).

KOLONKO, N. Mrs.; LEWANDOWSKI, Z.; MAKOWSKA-Rzeszutko, M. Mrs.;
NIEWODNICZANSKI, H.; WIKTOR, S.; WROBEL, Z. Mrs.

Energy and angular distributions of the neutrons from the stripping
reaction $^{12}\text{C}(\text{d},\text{n})^{13}\text{N}$. Acta physica Pol 23 no.2:225-234 F '63.

1. Institute of Nuclear Physics, Krakow, and Institute of Physics,
Jagellonian University, Krakow.

KOLONKO, T.

More about static electricity. p.18.

(OCHRONA PRACY: BEZPIECZENSTWO I HIGIENA PRACY. Vol. 12, No. 7, July 1957. Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 10, October 1957. Uncl.

ZAPROMETOV, M.N.; KOLONKOVA, S.V.

Diurnal dynamics of catechins and their alicyclic precursors
(quinic and shikimic acids) in a tea plant. Fiziol.rast. 12
no.4:646-652 J1-Ag '65. (MIRA 18:12)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva AN SSSR,
Moskva. Submitted December 30, 1964.

KOLONKOVA, Ye. V.; TELEGINA, I. V.

"Two- dimensional defects in irradiated and in deformed crystals."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome,
9 Sep 63.

Physics Dept, Moscow State Univ.

BARKAN, L.Z., inzh.; KOLONSKA, L.M.

Adjustment of short-circuit to a ground protection system in
6 kv. network with capacitive current compensation. Elek. sta.
33 no.5:89-90 My '62. (MIRA 15:7)

(Electric power distribution)
(Electric protection)

SAVEL'YEV, V.P.; KOVAL'SKAYA, A.V.; BERUKOV, F.V.; GALKIN, Yu.P.; KROKHOTIN, A.I.; SINEGUBKIN, V.V.; EPSHTEYN, A.L.; TSIRKIN, M.Z.; LAVRUSHINA, N.S.; GUBAREV, A.A.; KONTOROVICH, L.M.; KOROLEV, V.N.; USTIMENKO, I.L.; KURNAKOV, S.N.; POLUSHKIN, M.K.; LIBE, N.A.; IVANOV, N.P.; D'YACHENKO, G.I.; FILIPPOV, I.F.; KHUTORETSKIY, G.M.; VARTAN'YAN, G.P.; RUSOV, Ye.Kh.; BARKAN, L.Z.; KOLONSKAYA, L.M.; GORBATENKO, F.I.

Inventions. Energ. i elektrotekh. prom. no.4:39 C-D '64.

(MIRA 18:3)

KOLONIAROV, I. KH.

[illegible]

- 152 -

... and Other Building

KOLONTAROV, I. Kh.

Dissertation: "The Process of Solodification of 'Glinite'-Portland Cement in Sulphate Media." Cand Chem Sci, Inst of Chemistry, Acad Sci Uzbek SSR, Tashkent, 1953.
(Referativnyy Zhurnal--Khimiya, Moscow, No 4, Feb 54)

SO: SUM 243, 19 Oct 54

Kolonterov, I. Kh.

MT The crystallization of gypsum and sulfoaluminate in portland cement in presence of calcined clay. I. Kh. Kolonterov and Yu. T. Tashpulatov. *Trudy Inst. Khim., Akad. Nauk Uzbe. S.S.R.* No. 4, 23-33 (1953).—The influence of calcined clay on the formation of gypsum and Ca sulfoaluminate during the setting of portland cement in sulfate soln. was studied. The cement had a high satn. coeff., low silicate modulus, and high $\text{CaO} \cdot \text{Al}_2\text{O}_3$ content. The hydraulic admixt. was a local clay contg. 67% of kaolin. The chem. compns. of the materials were (in %): (a) portland cement SiO_2 21.60, Al_2O_3 6.82, Fe_2O_3 3.65, CaO 65.97, MgO 1.85, SO_3 9.2, loss on calcination 0.2; (b) kaolin SiO_2 60.12, Al_2O_3 27.02, Fe_2O_3 0.95, CaO 1.80, MgO 0.04, SO_3 0.14, loss on calcination 8.94. The clay was calcined at 800° and 930°. Absorption of lime from aq. lime soln. was 221 mg./g. and 146 mg./g., resp. Extn. with 0% aq. HCl followed by pptn. with Na_2CO_3 soln. gave 38.20% SiO_2 , 26.85% Al_2O_3 , and 11.28% SiO_2 and 1.20% Al_2O_3 , resp. The attacking agents were satd. aq. soln. CaSO_4 and 5% aq. Na_2SO_4 , 30 ml. for each sample; control samples were kept in soft water. The soln. was changed after 1, 2, 3, 6, and 9 months. In water, all cements increased in strength; in sulfate soln. pure portland cement was destroyed; admixing of 20% of calcined clay to portland cement was not sufficient for complete puzzolanization, and such cements were destroyed or lost their strength in sulfate soln.; mixts of 60 parts of portland cement with 40 parts of clay calcined at 800° and 40 parts of cement with

60 parts of clay calcined at 930° were resistant to the sulfate soln. Portland cement 60 parts with 40 parts of clay calcined at 930° was intermediate. The accumulation of free and bound CaSO_4 and sulfoaluminate was studied by detn. of SO_4 in hydrated cement. The cement sample was washed with H_2O , kept in abs. EtOH for 2 days, dried at 70-80°, and ground until it completely passed through a sieve of 4000 holes/sq. cm. For free-gypsum detn., the sample (4.6 g.) was placed in a flask and shaken for 1 hr. with 200 ml. satd. lime soln. contg. 0.2111 g./l. CaSO_4 , which dissolves free gypsum and does not dissolve sulfoaluminate. Total SO_4 was detd. in another sample dissolved in aq. HCl. The Ca sulfoaluminate was detd. by difference of total SO_4 and SO_4 as $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$. The setting of portland cement contg. 11% Ca in satd. soln. of CaSO_4 is accompanied by formation of Ca sulfoaluminate the rate of crystn. of which slows in the course of 12 months. In earlier stages of setting the strength increases but finally the cement is destroyed. In 5% Na_2SO_4 soln., CaSO_4 is formed intensively, causing destruction of the cement. Admixing of clay calcined at 930° retards the formation of Ca sulfoaluminate and CaSO_4 . Mixts. contg. 60% of clay becomes stable towards sulfates. The admixing of clay calcined at 800° does not decrease the formation of Ca sulfoaluminate; with 40% of clay, in the Na_2SO_4 soln. there is addnl. formation of sulfoaluminate from active alumina of clay. Increase of CaSO_4 in samples was not observed. The samples were very stable in spite of the great extent of crystn. of sulfoaluminate. Twice as much lime was extd. by soft water from pure portland cement as from samples contg. 40% of clay calcined at 800°. A. Shadan

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KOLONTAROV, I.Kh.; TASHPULATOV, Yu.T.

Effect of hydraulic additives on the formation of calcium sulfoaluminate
in the reaction of tricalcium aluminate and gypsum. Izv.AN Uz.SSR
no.4:49-62 '56. (MIRA 14:5)

(Calcium aluminates)

(Portland cement)

TASHPULATOV, Yu.T. [deceased]; KOLOMTAROV, I.Kh.; GLEKEL', F.L.

Effect of the various active clayites on the mechanical strength of
portland cements. Izv. AN Uz. SSR. Ser. khim. nauk no.4:103-108
'57. (MIRA 11:9)

(Portland cement--Testing)

KOLONTAROV, I.Kh.; TASHPULATOV, Yu.T. [deceased].

Resistance to the action of sulfates of "clayite"-portland cement
in plastic solutions. Dokl. AN Uz. SSR no.10:21-24 '57.

(MIRA 11:5)

1. Institut khimii AN UzSSR. Predstavleno akademikom AN UzSSR M.N.
Mabiyevym.

(Portland cement)

TASHPULATOV, Yu.T.; [deceased]; KOLONAROV, I.Kh.; MARKOVA, L.F.

Effect of magnesium-containing waters on the hardening of
"clayite"-portland cement. Dokl. AN Uz. SSR no.2:27-30
'58.

(MIRA 11:5)

1. Institut khimii AN UzSSR. Predstavleno akad. AN UzSSR M.N.
Nabiyevym.

(Portland cement)

TASHPULATOV, Yu.T. [deceased]; GLEKEL', F.L.; KOLOMTAROV, I.Kh.

Weather resistant "Clayite"-portland cement. Uzb. khim. zhur.
no.2:73-85 '58. (MIRA 11:8)

1. Institut khimii AN UzSSR.
(Cement--Testing)

TASHPULATOV, Yu.I. [deceased]; GLEKEL', F.L.; KOLONTAROV, I.Kh.

Hardening of clayite-portland cement under the alternating action of
salt solutions. Uzb. khim. zhur. no.3:19-27 '58. (MIRA 11:9)

1. Institut khimii AN UzSSR.

(Cement--Testing)

KANTSEPOL'SKIY, I.S.; KOLONTAROV, I.Kh.; STRAVCHINSKIY, A.I.

Determination of the conditions for the autoclave treatment
of Portland cement and optimum addition of natural burnt clay
to it. Uzb. khim. zhur. no.4:55-61 '60. (MIRA 13:9)

1. Institut khimii AN UzSSR.
(Portland cement) (Clay)

KANTSEPOL'SKIY I.S.; GLEKEL', F.L.; KOLONTAROV, I.Kh.

Effect of the density of cement stone on the corrosive processes
in glinite-portland cement during sulfate aggression. Kor. tsem.
i mery bor'by s nei no.1:128-140 '61. (MIRA 17:2)

KOLONTAROV, I.Kh.

Effect of gypsum on the strength of pozzuolana portland cements
during hardening under normal or hydrothermal conditions.
Uzb.khim.zhur no.3:59-63 '61. (MIRA 14:11)

1. Institut khimii AN UzSSR.
(Portland cement)
(Gypsum)

KOLONTAROV, I.Kh.; STRAVCHINSKIY, A.I.

Frost resistance of autoclaved portland cement with burned-clay
additives. Uch.zap.SAIGIMS no.5:197-203 '61. (MIRA 15:11)
(Portland cement)

GLEKEL', F.L.; KOLONTAROV, I.Kh.

Effect of the kinetics and conditions of the crystallization
of sulfates on the sulfate resistance of glinite-portland
cement. Kor.tsem.i mery bor'by s nei no.2:158-171 '62.

(MIRA 15:11)

(Portland cement)
(Sulfates)

KOLONTAROV, I.Kh.; STRAVCHINSKIY, A.I.

Sulfate resistance of autoclave-treated giesh portland
cement in solutions of plastic consistency. Kor.tsem.i
mery bor'by s nei no.2:177-179 '62. (MIRA 15:11)
(Portland cement)
(Sulfates)

KOLONTAROV, I.Kh.; STRAVCHINSKIY, A.I.

Effect of various mineral additives on the strength of portland cement during its hydrothermal treatment. Uzb.khim.zhur. 6 no.5:20-24 '62. (MIRA 15:12)

1. Institut khimii AN UzSSR i Sredneaziatskiy institut geologii i mineral'nogo syr'ya.

(Portland cement)

STRAVCHINSKIY, A.I.; KOLONTAROV, I.Kh.

Effect of the quality of "gliezh" (naturally calcined clay) on the hardness of portland cement during hydrothermal processing. Uch. zap. SAIGIMSa no.7:255-259 '62. (MIRA 17:2)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent i Institut khimii AN UzSSR.

TOKHTAKHODZHAYEV, S.T.; KOLONTAROV, I.Kh.; ROZOV, M.N.; BURSHTEYN, I.I.;
KHRULEVA, T.V.; ARETSKAYA, Yu.S.; POPOVA, N.M.

Production of glinite by burning in a rotary kiln. Uzb. khim.
zhur. 7 no.5:43-49 '63. (MIRA 17:2)

1. Institut khimii AN UzSSR.

STRAVCHINSKIY, A.I.; KOLONTAROV, I.Kh.

Effect of the quality of sand as an aggregate on the strength of burned-rock portland cement undergoing autoclave treatment. Uch.zap. SAIGIMSa no.10:167-170 '63. (MIRA 17:2)

KRASNOV, M.L., prof.; GRISHINA, V.I.; SIVOSHINSKIY, D.S.; MILOVIDOVA, I.A.;
AGRANAT, V.Z.; GULYAYEVA, E.G.; KOLONTAROV, K.D.

Clinical method of diagnosing intraocular tumors using radioactive phosphorus. Vest. oft. no. 3:3-9 My-Je '62. (MIRA 15:8)

1. Kafedra glaznykh bolezney i kafedra meditsinskoy radiologii Tsentral'nogo instituta usovershenstvovaniya vrachey (for Krasnov, Grishina, Sivoshinskiy). 2. Moskovskaya glaznaya klinicheskaya bol'nitsa (for Milovidova). 3. Vsesoyuznyy nauchno-issledovatel'skiy instituta meditsinskogo instrumentariya i oborudovaniya (for Agranat, Gulyayeva, Kolontarov).

(EYE---TUMORS)

(PHOSPHORUS---ISOTOPES)

KOLONTAY, Yu.Yu.

Injuries of the brachial plexus among the newborn. Ortop.,
travm. i protez. 18 no.5:31-36 S-0 '57. (MIRA 12:9)

1. Iz Ukrainського nauchno-issledovatel'skogo instituta ortopedii
i travmatologii im. M.I.Sitenko (dir. - chlen-korrespondent ANU
SSSR prof.N.P.Novachenko).

(BIRTH INJURIES) (BRACHIAL PLEXUS)

USSR / Human and Animal Morphology, Normal and Pathological.
Pathological Anatomy.

S

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 36053

Authors : Korzh, A. A.; Kolontay, Yu. Yu.

Inst : Not given

Title : Contribution to the Question of Hematoma Ossification.

Orig Pub : Vestn. khirurgii, 1957, 78, No. 4, 34-38.

Abstract : Experiments on rabbits indicated that the fundamental role, played in the formation of bones and soft tissues, is blood effusion. Ossification begins on the 7-8th day and is determined roentgenologically from the 10-12th day. Ossification of the hematoma was noted in five patients. In distinction of the ossification of myositis, the hematoma organizes in whole and, in the process of development, acquires the structure of spongy bones, solidifying from the surface. A case of malignant ossification is reported.

Card 1/2

*Ukr Sci Res. Inst.
Orthopedics & Traumatology in M. I. Sitenko*

USSR / Human and Animal Morphology, Normal and Pathological.

S

APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000823920013-3"

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 36053

During the progressive process of ossification, it is recommended to use operative therapy with the careful removal of the formation. -- A. I. Ashkenazi.

Card 2/2

KOLONTAY, Yu. Yu., Candidate of Med Sci (diss) -- "Injuries to the brachial plexus in newborn children". Khar'kov, 1959. 12 pp (Min Health Ukr SSR, Khar'kov State Med Inst), 250 copies (KL, No 20, 1959, 115)

KOLONTAY, Yu.Yu.

Distal metaphysis of the humerus in the child from the surgical point of view (from "Acta Universitatis Palackinae Olomucensis," vol. 26, 1958). Ortop.travm.i protez. 21 no.3:65 Mr '60.

(HUMERUS)

(MIRA 14:3)

POGOREL'SKIY, M.A., dotsent[deceased]; Prinimal uchastiye KOLONTAY, Yu.Yu., starshiy nauchnyy sotr., kand. med. nauk; NOVACHENKO, N.P., prof., zasl.deyatel' nauki, prof., red.; POTOTSKAYA, L.A., tekhn. red.

[Plaster casts] Gipsovaia tekhnika. Pod red. N.P.Novachenko.
2. izd., perer., dop. Kiev, Gos. med. izd-vo USSR, 1961. 186 p.
(MIRA 15:3)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Novachenko). 2. Ukrainskiy nauchno-issledovatel'skiy institut ortopedii i travmatologii im. Sitenko (for Kolontay).

(PLASTER CASTS, SURGICAL)

KOLONTAYEV, V.M., kand. biol. nauk

Fertilization value of the Antonovka apple pollen and its clones in self- and cross-pollination. Agrobiologiya no.4:623-626 JI-Ag '65. (MIRA 18:11)

1. Tambovskiy gosudarstvennyy pedagogicheskiy institut.

KOLONTAYEV, V.M.

Breeding the Antonovka apple along clone lines. Agrobiologiya
no.3:361-364 My-Je '62. (MIRA 15:10)

1. Tsentral'naya geneticheskaya laboratoriya imeni I.V.Michurina,
g. Michurinsk.

(APPLE--VARIETIES)

KOLONTAYEV, V.M.

Variability of the Antonovka apple as related to the zone of growing. Agrobiologiya no.6:927-930 N-D '63.

(MIRA 17:2)

1. Tsentral'naya geneticheskaya laboratoriya imeni I.V. Michurina, Michurinsk.

c A

3

Determination of the orientation of coarse single crystals.
 Yu. A. Bagaryatskii and R. V. Kolontsova (Moscow State Univ.). *Zvezdskaya Lab.* 15, 1002-71(1949); cf. C.A. 43, 49175. — Back-reflection methods for the orientation of metal monocrystals were described by Eikstein and Vahrenberg (*Z. Krist.* 89, 525-8(1934)) and Greninger (*ibid.* 91, 424-32(1935)). The back-reflection conditions for structural planes with Z_h above 100 are discussed and tabulated for crystals of Cu, Fe, Ni, Al, and their alloys, and the wave lengths most suitable in white x-radiation indicated; the transmittances through Lindemann windows are partly not favorable enough. The strong fluorescence of Cu and Zn in W L radiation must be considered; for Fe crystals the Ag L radiation is particularly suitable if the voltage is held below 25 kv. and the short waves are filtered away by Al foil (10 to 20 μ thick). The app. used was a common Laue camera type, with a goniometer head for precision adjustment of the crystal. The principle of the diagrams produced by back reflection is demonstrated for the most general case in the gnomonic projection, and its transformation to oriented positions of the crystallographic axes. For the detn. of the indexes of the spots the Greninger hyperbola diagrams are useful in isometric metal crystals. For the cubic-centered and face-centered lattices 6 "standard" stereograms are given for the directions $[100][111][101]$ (Wulff protractor with 200 mm. diam.). The orientation of a polished Fe crystal is given as an example for the practical use of the standard diagram, and the relations in the stereographic projection demonstrated. For crystals of lower symmetry the oscillation method is more convenient than the standard projection methods. . . . W. Eitel

MA

Laboratory Apparatus
12

*A Bent-Crystal X-Ray Monochromator. Yu. A. Bagaryat-
sky and E. V. Vedenkova (Zavod. Lab., 1960, 28, (8), 955-
961).—[In Russian]. The monochromator is intended prin-
cipally for single-crystal work, for which flat monochromators
(which give a beam) have too little intensity. A small aperture
(14-2") is used, and the geometrical arrangement allows
the whole focal spot to be "viewed". Focusing is necessarily
imperfect, but this is immaterial for many appn. where the
main requirement is to remove background scattering. The
image of the direct beam is either square or in the form of a
narrow line. Quartz or topaz was used; the a doublet was not
resolved. Formulae and a graph for calculating geometrical
quantities involved are given. The adaptation of ordinary
single-crystal cameras for use with this monochromator is
described. The main innovation is the use of a wire cross as a
"sight-line" (as on a gun); together with the single collimator
pinhole, this defines the mean direction of the beam. (Ab-
stracted from Palmer Research Institute Translation No. 33.)
—R. W. C.

MA

The Diffuse Scattering of X-Rays by Partially Deformed Single Crystals of Aluminum. E. V. Kolesnikov (*Doklady Akad. Nauk S.S.S.R.*, 1959, 75 (2), 149-152; *Pulver Research Inst. Translation No. 13*). [In Russian]. The diffuse scattering of monochromatic X rays ($\text{CuK}\alpha$ radiation, in some cases on a white spectrum background) by undeformed and plastically deformed Al single crystals was studied. X-ray photographs obtained from undeformed crystals with monochromatic radiation show that the diffuse max. (thermal spots) are approx. circular and do not change with changing orientation of the crystal. On reducing the temp. of the crystal from room temp. to 82°K , the intensity of the diffuse scattering patterns decreases considerably, whereas, when mutual radiation is used, the intensity of the diffuse spots decreases but the intensity of the selective max. increases. The diffuse scattering patterns of Al single crystals, having different degrees of perfection of crystal lattice, differ neither in shape of the thermal spots nor also in intensity. With small deformations of commercially pure Al (1-5% elongation) the diffuse scattering pattern does not change, though individual selective max. are somewhat broadened. If the extent of scattering in the direction of the vector of the reciprocal lattice is divided by λ_p that in a 2 direction in the plane through the primary beam by λ_{p2} , and that in a direction 1 this plane by λ_1 , then λ_1/λ_2 for a deformed crystal is approx. twice that for an undeformed crystal. For an undeformed crystal $\lambda_1/\lambda_2 \approx 1$. For an extension of 4-6%, λ_1/λ_2 is about double that for an undeformed crystal, while the intensity of the diffuse spots is increased during deformation. A change of shape and an increase of intensity of the diffuse max. are noticeable first of all in those diffuse max. corresponding to the junction $[111]$ in the reciprocal lattice; this is natural, as this plane (111) is a slip plane. A decrease of temp. from room temp. to 82°K causes the intensity of the diffuse max. to increase to approx. twice its initial value, as in the case of undeformed crystals; their shape does not change. Diffuse scattering patterns of undeformed single crystals of commercially pure Al and of pure (99.99%) Al are the same. In contrast to what occurs in commercially pure Al, an elongation of 8-10% of single crystals of pure Al produces no change of shape or intensity of the diffuse max. At this stage of deformation, the selective max. of pure Al show a stratified structure. The spectrum of elastic oscillations of Al single crystals is unchanged by randomly-situated disturbances of the crystal lattice. With 1-6% elongations, the random distribution of crystal lattice defects is not broken down. At 4-6% elongations the elastic oscillation spectrum resembles, to some extent, that of a laminated crystal; in disturbed regions, inter-atomic binding forces are weaker 1 the slip planes. In a single crystal of pure Al, a change of diffuse scattering pattern is not observed up to a 10% deformation (elongation); the vol. of the disturbed region is relatively small. -J. R. G. T.

Sci. Res. Inst. Physics, Moscow State U. 3

CA

3

Diffuse dispersion of x-rays by aluminum monocrystals.
K. V. Kolomoysa (Moskov Univ.). *Izv. Akad. Nauk
S.S.S.R., Ser. Fiz.* 13, 53-6 (1951).—The Born (C.A.
36, 5429) and the Raman (C.A. 36, 2304) theories are
reviewed and it is shown that measurements of the abs.
intensity of the diffraction max. and its temp. dependence

should show the validity of one or the other theory. An
exptl. method with a bent crystal is indicated. The posi-
tion and the intensity of diffraction spots in the x-ray picture
of the monocrystal were compared with theoretical space
sections of the reversed lattice according to Jahn (C.A.
36, 2192). Tests made at 293°K. and 82-83°K. are in
agreement with the Born ideas, but the results are not
sufficient to check the validity of either theory.
S. Pakswar

✓ 238/12/9

X-Ray Investigation of the Structure of Zr-Al₃ Pz.

Aluminum Alloy: Zr-Al₃ Pz. (1971) 10-162

Amplification of X-ray Scattering

1971 Temperature: 100 K

1971 Structure: Zr-Al₃ Pz.

1971 Author: N. V. Rysakova-Lukoshayn

1971 Title: X-Ray Investigation of the Structure of Zr-Al₃ Pz.

1971 Abstract: A camera is described which enables X-ray investigations

to be carried out of orientated stationary single

crystals with monochromatic radiation at low temperatures.

X-ray pictures of single crystals of Al-Cu and Al-Cu-Mg

alloys are presented, which were taken with monochromatic

rhodium radiation at a temperature of 82-83 deg. K. Bibl. 3.

(OT/1814).

189T67

USSR/Physics - Crystallography

Jul 51

"X-Ray and Electron-Microscope Pictures of Plastically Deformed Monocrystals of Aluminum," Ye. V. Kolontsova, Moscow State U

"Zhur Ekeper i Teoret Fiz" Vol XXI, No 7, pp 821-825

Author outlines data on investigations, by X-rays and electron microscope, of plastically deformed monocrystals of aluminum, and concludes that process of plastic deformation is accompanied by re-crystallization of crystal regions adjacent to sliding planes.

LC

189T67

USSR/Physics - Crystallography (Contd)

Jul 51

She was assisted by K. A. Michurin and A. I. Krokhin in laboratory work and thanks Prof G. V. Silyak for use of electron microscope. Submitted 10 Jul 50.

LC

189T67

KOLONTSOVA, Ye. V.

"Diffusional Dispersion of X-Rays With the Plastically-Deformed Monocrystals of Aluminum."
Thesis for degree of Cand. Physico-Mathematical Sci. Sub 22 Nov 52, Moscow Order of Lenin
State U imeni M. V. Lomonosov

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

KOLONTSOVA, Ye. V.

USSR/Physics - Monochromatic X-ray Sources May/Jun 52

"Camera-Monochromator for Photographing Polycrystals (KMER)," S. S. Rytkin, Ye. V. Kolontsova, M. M. Imanitskiy, Sci Res Inst of Phys, Moscow State Univ Leningrad Lomonosov

232T108
"Iz Ak Nauk SSSR, Ser Fiz" Vol 16, No 3, pp 372-385

Report heard at the conference on powerful monochromatic x-ray sources, held at Khar'kov 24-26 Jan 52. The purpose of the present work was to create a device, a camera-chromator, intended for x-ray

232T108

photographing of polycrystalline samples in comparatively soft radiation (Cu, Ni, Co, Fe), in which a bent monocrystal is employed in the camera for monochromatizing the radiation and use is made of the methods of focusing x-ray reflections. Describe selection of the crystal and its parameters and peculiarities of photographing in vacuo.

232T108

KOLONTSOVA, E. V.

USSR

Investigation of plastically deformed crystals by means of a narrow band of x-rays. E. V. Kolontsova. *Doklady Akad. Nauk S.S.S.R.* 93, 795-8 (1963).—The distances between the glide planes of plastically deformed crystals are on the order of $1-50 \mu$, and the diaphragm used in x-ray exposure must be reduced to approx. 0.01 the present size for the study of the structure details by x-ray diffraction methods. Diaphragms used in the present investigation were $10-15 \mu$ wide and were prepd. from plane parallel glass plates sepd. along the edges by thin foil. The exposure length was increased 20-40 times when the slit was reduced from 0.8 mm. to 15μ . A suitable camera with a reduced diaphragm was used to study by transmitted light single crystals of Zn, Cd, Sn, Al, Ni, AgCl, and several others, after being deformed by stretching. X-ray photographs of deformed Sn crystals, taken with an 0.8-mm. round diaphragm and a 15μ slit, are shown. The conclusion was reached that the crystals became broken up into separate sections at a slight angle to each other (approx. 0.3°) by plastic deformation and not during a subsequent tempering, as claimed by Cahn (*C.A.* 44, 1382b). The approx. size of the sections formed during plastic deformation is of the order of 1μ or smaller. W. M. Sternberg

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KOLONTSOVA, Ye.V.; TELEGINA, I.V.; PLAVNIK, G.M.

Structure of kink bands in some ionic crystals. Kristallografiia
1 no.4:419-424 '56. (MIRA 10:1)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Ionic crystals)

AUTHORS: Kolontsova, Ye.V. and Telegina, I.V.

70-5-15/31

TITLE: The Influence of the Conditions of Deformation on the Mechanism of the Formation of Kink Bands (Vliyaniye usloviy deformatsii na mekhanizm obrazovaniya polos sbrosa)

PERIODICAL: Kristallografiya, 1957, Vol.2, No.5, pp.658-662 (USSR).

ABSTRACT: Using X-ray Laue photographs the structure of kink bands in single crystals of Sn deformed by extension was examined. The influences of the rate of deformation and the initial orientation of the crystal on the form and structure of the bands were observed. Under certain definite conditions twinning of the parent crystal at the edges of the kink band is observed. The extensions used were about 300 - 350%, the specimen was cylindrical and the tension was applied along its axis. Kink bands were observed for any initial orientation of the crystal almost up to that least favourable for slipping when the direction of slipping makes an angle of 45° with the direction of the tension. The external form of the crystal after deformation depended on the rate of extension (slow-extensions in about 1 min; rapid-extension in a fraction of a second). For slow deformation the representation of the mechanism as due to dislocations (Barrett, J. Metals, 2, 599, 1949) was appropriate. For high rates of deformation where there was a non-uniform

Card 1/2

KOLONTSOVA, Ye. V.

AUTHORS: Kolontsova, Ye. V., Telegina, I. V.

20-4--22/51

TITLE: Note on the Mechanism of the Formation of Dispersion Bands (O mekhanizme obrazovaniya polos sbrosa).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 4, pp. 605-608 (USSR)

ABSTRACT: For the purpose of proving the existence of twins within the displacement ("kink") bands, the present paper investigates the structure of CsBr monocrystals deformed (by pressure). For this purpose samples of Caesium bromide ($4 \times 4 \times 25 \text{ mm}^3$) were compressed in a direction inclined by 15-20 degrees to the [100] direction. The structure of the "displacement" bands originating on this process were studied in polarized light and with the help of X-ray diagrams according to the method of Laue. Then the samples were cut to pieces and polished. These new samples were again investigated by X-rays. The investigation of the displacement bands in CsBr crystals shows the following facts: The dislocation lines suffer a sharp bend (just like in CsJ and TlJ-TlBr-crystals) in the domains in the vicinity of a distinct surface rupture along a certain line starting from an external crystals surface. The distinctness of the dis-

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Note on the Mechanism of the Formation of Dispersion Bands
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000823920013-3
20-4--22/51

placement band depends on the angle of the bend. The absorption bands are the more marked, the greater the value of this angle is. On roentgenograms, which have been taken from the domains near the bend line, distinct and extended interference maxima can be observed. The dimensions of the interposed twin layers depend on the object under investigation and on its stressing. Ordinarily, the twin domain is represented in the caesium-bromide crystals investigated here by a complete system of single crystal domains, which are rotated symmetrically. A further possibility for the explanation of the existence of different crystallographic interlinking faces is the approximately similar facility of the transformation of the lattice on a twin formation in the [11n] planes. According to a comparison of the computed and of the experimental values it may be assumed, that the twin formation in crystals of the CsCl type (which is observed within the "displacement" band) may take place on different crystallographic planes of the [1n0] and [11n] type. Further details are given. There are 3 figures, and 11 references, 5 of which are Slavic.

Card 2/3

AUTHORS: Kolontsova, Ye.V. and Telegina, I.V. SOV/70-3-1-15/26

TITLE: ~~The Investigation~~ of Deformed Crystals of NaCl by means of an X-ray Microbeam (Issledovaniye deformirovannykh kristallov NaCl s pomoshch'yu mikropuchka rentgenovskikh luchey)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 1, pp 86-88 (USSR)

ABSTRACT: Crystals of NaCl which were known, from optical observations in polarized light, to have undergone deformation by slipping in certain regions were examined by a microbeam technique. The regions visible were about $150\ \mu$ across. X-ray Laue pictures were taken of regions localizable to $15\ \mu$. Slits of width $30\ \mu$ were used and also circular diaphragms of diameter $1.5\ \text{mm}$, $0.15\ \text{mm}$ and $15\text{-}20\ \mu$. A tube with a W target was used. Deformed crystals which had been marked initially with one scratch were examined. The Laue spots were drawn out but not split so that slip regions must be less than $1\ \mu$ thick. The rotation of mosaic blocks was shown to be $[001]$ the slip plane being (110) and the slip direction $[1\bar{1}0]$. The angle of rotation was about 1° . Entirely different

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The Investigation of Deformed Crystals of NaCl by Means of an
X-ray Microbeam

SOV/70-3-1-15/26

pictures were obtained when a region where the continuous band (between crossed Nicols) was crossed by bright bands was examined. Here, the interference spots were seen to be broken up, the angle of rotation being about 2° about the same axis. Crystals which had been marked with six scratches behaved somewhat differently. The scratches were made in the [001] direction on the 100 faces of the crystals and observations (optical and X-ray) were made in the same direction. There are 1 figure and 7 references, 4 of which are Soviet and 3 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni
M.V. Lomonosova (Moscow State University imeni
M.V. Lomonosov)
SUBMITTED: May 14, 1957

Card 2/2

AUTHORS: Kolontsova, Ye.V. and Telegina, I.V. 70-3-3-14/36

TITLE: A Possible Mechanism for Twinning in Crystals of CsJ and CsBr (Vozmozhnyy mekhanizm dvoynikovaniya v kristallakh CsJ i CsBr)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 3, pp 334 - 338 (USSR)

ABSTRACT: The atomic displacements which must occur on the re-orientation of a crystal on deformation in twinning are examined. It is established that for the majority of twin planes the least displacements correspond to displacements of the atoms in rings analogous to those occurring in ring diffusion processes. Previous X-ray observations, although somewhat difficult, show the twin plane in CsJ and CsBr to be near 411. There are several planes, 150, 113, 114, 115, 125 and 127 all of which lie near to the possible direction. A diagram is given of the body-centred cubic type of lattice of CsJ and CsBr before and after twinning on the planes 114 and 103. It is shown that there are circular chains of displacements which would convert one lattice into the twinned lattice. There are 4 or 6 members in each ring. The root mean square atomic displacement on twinning on different planes \bar{s} is calculated in terms of the unit cell side as follows: for 120 and 130 0.16, for 150 0.17, for 140 0.19, for 112 and 111 0.22,

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A Possible Mechanism for Twinning in Crystals of CsJ and CsBr

70-3-3-14/36

for 115 0.28, for 114 0.29, for 113 0.33, for 127 0.39 and for 125 0.41. In fact twinning seems to occur on 150, 113, 114 and 115. Body-centred crystals with ions of only one sort give quite different theoretical results. Here \bar{s}^2 is very much lower for 112 than for any other plane. There are 2 figures and 12 references, 9 of which are Soviet and 3 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.
M.V. Lomonosova (Moscow State University imeni
M.V. Lomonosov)

SUBMITTED: April 6, 1957

Card 2/2

AUTHORS: Kolomtsova, Ye.V. and Telegina, I.V. SOV/70-4-4-19/34

TITLE: On the Possibility of Studying the Non-uniformities in the Plastic Deformation of Single Crystals by Means of a Microbeam of X-rays

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 4, pp 587-589 (USSR)

ABSTRACT: With a microbeam camera RKSO, fitted with accessories from an optical bench, specimens could be set to $1\ \mu$ in a $15\ \mu$ X-ray beam. Crystals of CsCl, Sn and NaCl have been examined. It is concluded that a $15\ \mu$ beam is suitable for showing up non-uniformities of dimensions $\geq 100\ \mu$. For some problems, such as strain on twinning, slip-band structure, etc., beams of $< 1\ \mu$ dia are needed. A $15\ \mu$ beam used on the twin boundary of a calcite crystal showed nothing of a $0.2\ \mu$ strained region expected from etching experiments. Preparation of a suitable pinhole is a major difficulty and fine-focus tubes of high specific loading are essential. Another method of examining deformed crystals is the topographic method of Lang (Ref 11).

~~C-41/2~~

Moscow State Univ.

Submitted: Aug 1958

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SOV/70-4-5-19/36

AUTHORS: Kolontsova, Ye. V., Sorokina, Yu. G., Telegina, I. V.

TITLE: Study of the Twinning of Calcite Crystals by a Narrow X-Ray Beam and Etching

PERIODICAL: Crystallorafiya, 1959, Vol 4, Nr 5, pp 742-748 (USSR)

ABSTRACT: The existing four concepts on the nature of atomic dislocations at glide bands and publications on the subject such as by Kontorova, T. A., Kolesnikov, G., Plavnik, G. M., Rays, G. B. and others, are cited. Imprinting a sharp knife into calcite crystals, the authors produced glide bands, "twins," and examined them under polarization and electron microscopes and by etching. Thus, the parts of the crystals for an X-ray study and the coordinate axes were selected. The etch pits proved to be most dense and large at the margins of glide bands. Some dislocation planes crossed the crystals, 2 mm thick, from one face to the opposite one, while the etch pits corresponding to other dis-

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Study of the Twinning of Calcite Crystals by a
Narrow X-Ray Beam and Etching

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SOV/70-4-5-19/36

locations disappeared after a deeper etching. The X-ray photographs were taken from: (1) the undistorted parts of the crystals, at least 0.5 mm from the margins and glide bands; (2) the boundaries of glide bands, i. e. including both the distorted and undistorted parts of the crystals; (3) glide bands, 0.5 mm off the band boundary. The crystals under test were oriented parallel to $[110]$ with an accuracy of $\pm 6-10^\circ$. The X-ray diffraction patterns from all the three parts were identical; no additional reflections were noticed in one or another part. The diffraction spots on the photos, taken by a narrow beam (15 to 20 μ -wide slit), exhibit a slight asterism; the diffuse branches extend in one or two directions. The most dense dislocations are confined to 10^{-7} to 10^{-6} cm zones at the margins of glide bands. This corresponds to tens or hundreds of the interatomic distances. The greater depth of pits within this zone points to deeper penetration of crystals by dislocations and the larger lateral extension of pits indicates a lower stability

Card 2/3

24.7100

77102
SOV/70-4-6-3/31

AUTHORS: Kolontsova, Ye. V., Ignat'yeva, L. A.

TITLE: Diffuse Scattering of X-Rays by Quartz Crystals Before and After the Exposure to Neutron Radiation

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 821-825 (USSR)

ABSTRACT: The X-ray diffraction photographs of quartz crystals were taken by Mo radiation, monochromatized reflecting from a slightly bent topaz crystal which proved to be better than pentaerythrite. The intensity of the X-ray beam was controlled taking photographs of a standard polycrystalline specimen parallel with those of the quartz under test. The intensities of diffuse maxima were measured photometrically, reciprocal lattice coordinates computed according to formulas derived by Yu. A. Bagaryatskiy, contour lines of equal diffusion drawn on reciprocal lattice projections, and the intensity changes in certain directions represented graphically. The latter disclosed that the exposure of both natural and artificial quartz crystals to neutron radiation, up to 10^{18} neutrons per cm^2 , does

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Diffuse Scattering of X-Rays by Quartz
Crystals Before and After the Exposure to
Neutron Radiation

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not alter the pattern and intensity of diffuse scattering to an extent greater than possible experimental errors. The exposure to neutron radiation of 10^{19} neutrons per cm^2 intensity increased the intensity of diffusion by 50%, but did not change the forms and positions of diffraction maxima (see Fig. 4).

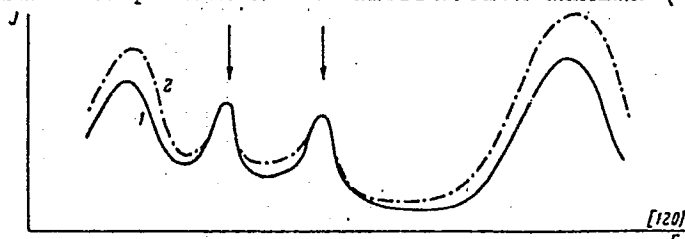


Fig. 4. Intensity distribution of diffracted X-rays along $[120]$. (1) before; and (2) after the exposure of quartz crystals to neutron radiation of 10^{19} neutrons per cm^2 intensity. Arrows point to the diffuse maxima of a standard specimen.

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Diffuse Scattering of X-Rays by Quartz
Crystals Before and After the Exposure to
Neutron Radiation

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This seems to indicate that exposure to neutron radiation does not alter the irregular nature of defect distribution but only the number of defects. After six months relaxation of the exposed crystals, the intensity increase of diffusion dropped from 50 to 20%. This obviously points to the decreased number of defects after relaxation. The quartz crystals, exposed to neutron radiation and etched by HF for 15 minutes, were studied under an electron microscope at 200-8,000 X enlargements. The tests failed to show any relationship between etch pits and dislocations. The etch pits on artificial crystals were smaller and sharper than on natural crystals. The crystals exposed to neutron radiation showed waved etch figures. L. I. Tsinober is acknowledged for the specimens made available and T. T. Filippova for electron-microscope studies. There are 4 figures; and 17 references, 9 Soviet, 6 U.K., 1 U.S., 1 French. The 5 most recent U.K. and U.S. references are: P. Clemens, Philos. Mag., 1, 10, 938 (1956); K. Huang, Proc. Roy.

Card 3/4

Diffuse Scattering of X-Rays by Quartz
Crystals Before and After the Exposure to
Neutron Radiation

77102
SOV/70-4-6-3/31

Soc., A, 190, 1020, 102 (1957); M. Wittels, Philos.
Mag., 2, 24, 1445 (1957); M. Wittels, F. Sherrill,
Phys. Rev., 93, 5, 1117 (1954); M. Born, Proc. Roy.
Soc., A, 180, 983, 397 (1942).

ASSOCIATION: Moscow State University imeni M. V. Lomonosov
(Moskovskiy gosudarstvennyy universitet imeni
M. V. Lomonosova)

SUBMITTED: February 7, 1959

Card 4/4

18.7000

77129

SOV/70-4-6-30/31

AUTHORS: Bagaryatskiy, Yu. A., Kolontsova, Ye. V.

TITLE: A Method of Accelerated Growth of Single Crystals of Aluminum and of Its Alloys by Recrystallization. Brief Communications

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 935-936 (USSR)

ABSTRACT: Having slightly altered the known method of single-crystal growth from plastically deformed aluminum or its alloys (M. O. Kornfeld, Phys. ZS der Sov. Un., 4, 668, 1933), the authors produced the desired crystals within a day and without complicated thermostatic devices. After numerous trial experiments they found that rods of technically pure aluminum (99.5% Al) and of Al alloys containing 4% Cu, or 3% Cu + 1% Mg, or 10% Zn turn into large crystals after being plastically deformed to a certain critical degree, immediately annealed below the temperature of recrystallization, and relaxed for several hours. They produced 0.8- to 1-mm wire by cold drawing polycrystalline specimens

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A Method of Accelerated Growth of Single
Crystals of Aluminum and of Its Alloys
by Recrystallization. Brief Communications

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SOV/70-4-6-30/31

of 3- to 4-mm thick rods. After the thermal treatment and relaxation the single crystals had a length up to 150 mm in technically pure Al wire; 30 to 40 mm in Al + Cu; 10 to 15 mm in Al + Cu + Mg; and 3 to 4 mm in Al + Zn. Additional annealing at 600° C did not make the crystals any longer but lowered their quality. The method failed to produce large single crystals of highly pure aluminum (99.99% Al). They were produced by placing the preliminarily annealed, stretched (2 to 3%) polycrystalline specimens into a cold furnace, raising the temperature to 450° C, annealing at this temperature for 5 to 10 hr, raising the temperature to 600° C, keeping the temperature of recrystallization for 4 to 6 hr, and cooling the specimens slowly with the furnace. The resulting single crystals were 60 to 70 mm long. The long single crystals can easily bend under their own weight and their structure be damaged. The crystal boundaries in Al wire are easily exposed by etching with HF, HCl, H₂O solution and in Al + Zn

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A Method of Accelerated Growth of Single
Crystals of Aluminum and of Its Alloys
by Recrystallization. Brief Communications

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with HF, HNO₃, and glycerin. There is 1 table; and 8
Soviet references.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskov-
skiy gosudarstvennyy universitet imeni M. V. Lomonosova)

SUBMITTED: January 9, 1959

Card 3/3

24.7100

78099
SOV/70-5-1-8/30

AUTHORS: Kolontsova, Ye. V., Zhestovskaya, M. I.

TITLE: Effect of Neutron Bombardment on Structure of Lithium Fluoride Crystals

PERIODICAL: Kristallografiya, 1960, Vol 5, Nr 1, pp 56-62 (USSR)

ABSTRACT: The exposure of crystals to neutron radiation has been known to: (1) produce defects such as lattice vacancies, interstitial atoms, and "thermal zones"; (2) alter the solid state structure due to local rise of temperature; (3) melt and recrystallize certain regions of crystals. The authors studied the first group of effects by selective etching, and analyzing the diffuse scattering of X-rays. LiF was selected because of its low heat conductivity, high transparency to X-rays, and the presence of well known methods and agents of etching. Narrow beams of limited range of wavelengths permitted the deter-

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Effect of Neutron Bombardment on Structure
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78099
SOV/70-5-1-8/30

mination of disoriented regions and the intensity distribution within the diffuse scattering maxima. The crystals were placed in the camera with one of the [100] parallel to the incident beam, and two others to the vertical and horizontal axes of the camera. The intensities of scattered rays, developed before and after the exposure of crystals to neutron radiation, could be compared using the diffractions from a Ni-wire, placed just before the crystals, as a scale. The exposure to neutron radiation of $7.8 \cdot 10^{17}$ neutron/cm² intensity produced weak diffraction arcs around some diffraction spots but did not change the scattering regions. The increase of the intensity of neutron radiation to $2.2 \cdot 10^{18}$ neutron/cm² increased the number of diffractions along concentric rings, and produced irregularly distributed new spots and anomalous diffraction lines,

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trending from the pattern center to diffraction spots of (200)-type. Further increased intensity of neutron beams to $5 \cdot 10^{18}$ neutron/cm² made the additional diffractions even more diffuse and caused their coalescence; the anomalous diffraction lines became very complicated; the intensity of some diffractions increased while that of others decreased; the crystals became parted into slightly disoriented blocks, 0.1 to 1 μ across. Etching of crystals before and after the exposure to neutron radiation confirmed the conclusions based on the analysis of diffuse scattering. Unexposed crystals showed etch figures repeating the dislocation pattern, while exposed crystals got rough surfaces due to numerous uniformly distributed pits of irregular form. Within this uniformly etched surface, especially at its margins, there appeared equiaxial areas with deeper pits, and elongated areas parallel to $[100]$, with rectangular pits. The depth and extension of pits as well as of the areas with deeper and rectangular

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Effect of Neutron Bombardment on Structure
of Lithium Fluoride Crystals

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weaker while exposed to neutrons, and can, consequently, break easily when partition into blocks takes place. There are 9 figures; and 14 references, 5 U.S., 5 Soviet, 2 French, 1 U.K., 1 Danish. The U.S. references are: J. J. Gilman, W. G. Johnston, G. W. Slears, J. Appl. Phys., 29, 5, 747, 1958; J. J. Gilman, W. G. Johnston, J. Appl. Phys., 29, 6, 877, 1958; R. Chang, J. Appl. Phys., 28, 4, 385, 1957; J. Gilman, W. Johnston, J. Appl. Phys., 27, 9, 1018, 1956; F. Seitz, Phys. Rev., 98, 1530, 1955.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova)

SUBMITTED: June 2, 1959

Card 5/5

24.7200 (1144, 1160)

26649
S/070/61/006/005/007/011
E032/E114

AUTHORS: Kolontsova, Ye.V., and Telegina, I.V.

TITLE: Unusual effects observed with X-rays scattered off irradiated and deformed LiF single crystals

PERIODICAL: Kristallografiya, 1961, Vol.6, No.5, pp.768-769 (+ 1 plate)

TEXT: The authors reported an "interesting effect" which they observed in the course of studies of the effect of deformation and neutron irradiation on the structure of LiF crystals. Diffusely scattered X-rays (fixed single crystal; Mo K_{α} radiation) were found to produce on the photographic plate relatively well defined curved lines having a symmetry corresponding to the Laue pattern. These curves have a double structure: on the convex side (to the primary beam) they are "black", i.e. they are stronger than the general background, while on the concave side they are "white", i.e. they are weaker than the general background. In most cases this pattern is observed both with deformed (by compression) and irradiated crystals. Attempts to explain the appearance of these curves (lines) by one-dimensional diffraction

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Unusual effects observed with X-rays... ²⁶⁶¹² S/070/61/006/005/007/011
E032/E114

were unsuccessful. It is known (R.W. James, Ref.6; "Optical principles of the diffraction of X-rays", Opticheskiye printsipy difraktsii rentgenovskikh luchey, Izd-vo inostr. lit., 1950, pp.398-415) and (A. Guinier, Ref.7: Theorie et technique de la Radiocristallographie, pp.289-295. 1956) that similar "black-white" lines are observed if the X-ray source lies in the crystal itself, or secondary X-ray emission is produced, and when a widely divergent primary beam ($\sim 60^\circ$) is employed. In the present experiments the divergence of the beam was less than 2° and the secondary emission was practically absorbed by air before it reached the film. It is concluded that this is a new effect which may possibly be due to dynamic scattering effects in imperfect crystals. There are 2 figures and 7 references: 2 Soviet and 5 non-Soviet, including 1 translation from English into Russian as quoted in the text above.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.
M.V. Lomonosova (Moscow State University imeni
M.V. Lomonosov)

SUBMITTED: March 27, 1961

Card 2/2

21.6200
24.7100

1138 1043, 1147

20173

S/089/61/010/003/003/021
B108/B209

AUTHOR:

Kolontsova, Ye. V.

TITLE:

Nature of residual defects in single crystals after neutron bombardment and deformation

PERIODICAL:

Atomnaya energiya, v. 10, no. 3, 1961, 227-232

TEXT: The author reports on structural defects in single crystals which were exposed to plastic deformation and to neutron bombardment. Effects of these two kinds give rise to similar changes in the physical properties. The investigations were chiefly made by X-ray diffraction with comparison of the intensity distributions of diffuse scattering and partly by etching. The specimens subjected to neutron bombardment were LiF ($8 \cdot 10^{17}$, $2 \cdot 10^{18}$, $3 \cdot 10^{18}$, and $5 \cdot 10^{18}$ neutrons/cm²) and alpha quartz (10^{17} , 10^{18} , 10^{19} neutrons/cm²); plastic deformation by alternate compression and expansion was applied to single crystals with ionic (LiF, NaCl, KCl, AgCl) and metallic (Al, Zn, Cd, Sn) lattices. The experimental data showed that the intensity of diffuse scattering from deformed or

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bombarded Al and alpha quartz is enhanced. The intensity maxima of diffuse scattering from alpha quartz were higher by one and a half times their amount when the quartz was bombarded with 10^{19} neutrons/cm²; when aluminum was expanded by 7-10%, the intensity exceeded its normal amount by 15%. This increase in intensity of the maxima is due to lattice defects arising from neutron bombardment or deformation and entailing additional scattering (Ref. 11: Yu. A. Bagaryatskii, Ye. V. Kolontsova. Kristallografiya, 4, no. 6, 935 (1959)). Analysis of the Laue maxima or filming of the etching process leads to the conclusion that, due to deformation or neutron bombardment, the crystal is split into parts which, in the case of deformation, are not distinctly marked near the glide line and lines of dislocation and, in the case of neutron bombardment, in a surface layer whose depth depends on the total incident neutron flux. The presence of regions with new orientation may be determined from the additional interference maxima in the radiographs of the bombarded or deformed crystals. The size of these regions is up to 10^{-4} cm. When neutron bombardment or deformation is continued, the individual interferences will unite into one bent streak. The number of streaks on

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Nature of residual defects in ...

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the background of the diffuse maxima depends on the nature of the crystal. In crystals deformed at room temperature, a re-orientation may take place similar to a re-crystallization. There are 4 figures and 19 references: 16 Soviet-bloc and 3 non-Soviet-bloc.

SUBMITTED: September 22, 1960

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S/070/62/007/001/021/022
E073/E335

AUTHORS: Kolontsova, Ye.V., Krokchina, A.I. and Vakhomchik, L.P.

TITLE: Selective etchings of aluminium crystals

PERIODICAL: Kristallografiya, v. 7, no. 1, 1962, 152 - 153

TEXT: The concentration of chemically-produced etch patterns depends on the method of growing the crystal, its purity and the orientation of the etched surface of the crystal. According to Braun et al (Ref. 8: Philos. Mag., 3, 35, 1312-1317, 1958), the maximum is achieved for surfaces of the type $\{111\}$. Defects in the structure of the crystal, which arise during deformation, are not detected by this method of etching: the distribution of etch pits and their concentration is about equal on a polished surface of a crystal in the deformed and in the non-deformed states. On the basis of results of layer-by-layer etching and data published in the literature, it is concluded that without special ageing treatment of the investigated crystal the etching agent of Lacombe, Beaujard and Wyon will reveal distortions in the crystal structure which occurred during growth; accumulations of dislocations corresponding to

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Selective etchings of

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boundaries of disorientated sections of the crystal can be reliably detected. Ageing undoubtedly changes the substructure of the investigated crystal and this is highly undesirable when studying the influence of deformation or irradiation on the structure of the crystal. Therefore, the authors have attempted to find methods of etching which will reveal "fresh" defects. Observations have shown that electrolytic and ion-bombardment etching reveal "fresh" dislocations arising in the crystal during the process of deformation by shear. This is illustrated in microphotographs of aluminium single crystals which show that the slip traces appear in specimens etched by means of an electrolyte as well as in repolished specimens that have been subsequently etched by ion bombardment. Details are given on the conditions of electrolytic and ion-bombardment etching in the applied experiments. There is 1 figure. ✓

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S/070/62/007/003/002/026
E132/E460

AUTHORS: Kolontsova, Ye.V., Kulyavik, A.

TITLE: The influence of X-radiation on the structure of
crystals of the NaCl type

PERIODICAL: Kristallografiya, v.7, no.3, 1962, 353-357 + 2 plates

TEXT: Changes in the structures of crystals of the NaCl type observed after irradiation with X-rays are qualitatively analogous to the changes produced in crystals by neutron irradiation. Point defects appear statistically distributed throughout the volume of the crystal. On the surface of the irradiated crystal, orthogonal bands limited by the form {100} are observed, evidently as a result of the accumulation of vacancies. In the irradiated crystals, two-dimensional disturbances appear which are oriented in the planes {100} and possibly also in the planes {130}. Pairs of blocks were used, cleaved from the same crystal; one was irradiated with X-rays from a Mo target at 10 mA, 47 kV and periods of 5 to 2000 hours; the other was kept as a control. Defects were shown by X-ray anomalous scattering methods (using monochromatic Mo radiation)
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The influence of X-radiation ...

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E132/E460

as developed by S.S.Kvitka (Kristallografiya, v.4, no.1, 1956, 485). Selective etching was also used. NaCl, KCl and LiF crystals were studied. In NaCl, after about 2000 hours irradiation, the diffuse maxima increase with respect to the Bragg reflexions by about 15 to 18%. There are 4 figures and 1 table. ✓

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
im. M.V.Lomonosova (Moscow State University
imeni M.V.Lomonosov)

SUBMITTED: July 5, 1961

Card 2/2

18.9200
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S/126/62/013/003/020/023
E039/E135

AUTHOR:

Kolontsova, Ye.V.

TITLE:

On the degree of perfection of single crystals of aluminium grown by recrystallisation methods

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.3, 1962, 463-465

TEXT: The quality of single crystals grown by recrystallisation at different temperatures was studied by a structure sensitive method and the reason for the apparent decrease in degree of perfection of crystals grown at higher temperatures is examined. Preliminary observations were made visually and with a microscope. It is shown that, for single crystals grown at a temperature near to the melting point of aluminium, regularly spaced bands occur. There are two types of band: thin clearly defined bands and wide diffuse bands. The width of the bands is 5 - 30 μ and the distance between them is 10 to 100 μ . The direction of these bands corresponds to layers passing through the crystal. By the use of the Laue method the structure of the

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On the degree of perfection of ...

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crystal was examined using a narrow beam of X-rays. A comparison of the interference maxima on the Laue diagrams obtained in the banded parts and for the spaces between showed that the banded parts of the crystal were deformed and contained a large number of point defects. It seems probable that the narrow bands are displacement bands and the wide bands are fault bands. The displacement may occur under the influence of the weight of the crystal itself. Crystals of the same shape and size grown at temperatures of 450 and 600 °C were compared. After etching it was calculated that for the crystal grown at 600 °C the density of dislocations $\rho_{600} = 5 \times 10^6/\text{cm}^2$, and for the one grown at 450 °C the value $\rho_{450} = 7 \times 10^6/\text{cm}^2$ in the regions between bands. It is concluded that crystals with a higher degree of perfection are grown at 450 °C and that, in addition, the average density of dislocations in the non-deformed parts of the crystal are significantly lower than for crystals grown at 600 °C. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.

M.V. Lomonosova (Moscow State University imeni

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M.V. Lomonosov).

SUBMITTED: July 8, 1961.

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S/O20/62/147/003/017/027
B104/B186

AUTHORS: Kolontsova, Ye. V., Telegina, I. V.

TITLE: Radiation defects in quartz

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 3, 1962, 592 - 593

TEXT: This is mainly a review of the results in papers (published since 1956) on changes in the crystal structure caused by neutron bombardment. The intensification of the diffuse maxima of X-ray scattering under a neutron flux of up to 10^{19} n/cm² and the considerable changes of the diffraction pattern at a total flux of up to $7 \cdot 10^{19}$ n/cm² are discussed. These changes are: (a) a sixth-order axis of symmetry appears in the place of the third-order axis of symmetry that is characteristic of α -quartz; (b) a halo in the angular range between 6° and 17° is characteristic of the scattering of X-rays from an amorphous substance; (c) the field of interference is limited; (d) the intensity of the Laue patterns decreases, and that of the diffuse maxima increases. The causes of the intensification of the diffuse maxima are discussed. A possible rearrangement of the structure is inferred from the change of the symmetry. It is
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Radiation defects in quartz

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not possible to conclude from these data whether a β -transition or a re-orientation according to the twinning law takes place. In twinning-law transitions amorphous regions can arise at the boundaries owing to the different densities of crystalline and amorphous quartz. $\alpha \rightarrow \beta$ transitions appear to be possible on neutron bombardment at low temperatures (100 - 200°C). The complete destruction of the crystal structure at a total flux of about $2 \cdot 10^{20}$ n/cm² is explained by the rupture of the covalent bonds when the mutual orientation of the Si-O tetrahedrons is disturbed. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: June 6, 1962, by G. V. Kurdyumov, Academician

SUBMITTED: May 29, 1962

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KOLONTSOVA, YE. V.

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PHASE I BOOK EXPLOITATION

SOV/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences
USSR, Resp. Ed.

Deystviye yadernykh izlucheniy na materialy (The Effect of
Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR,
1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A. Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov, B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk, Yu. I. Pokrovskiy, and N. F. Pravdyuk; Ed. of Publishing House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and I. N. Dorokhina.

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SOV/6176

The Effect of Nuclear Radiation (Cont.)

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research organization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ -radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

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The Effects of Nuclear Radiation (Cont.)

SOV/6176

- Pravdyuk, N. F., Yu. I. Pokrovskiy, and V. I. Vikhrov. Effect of Neutron Irradiation on Internal Friction in Mono- and Polycrystals of Zinc 235
- Zakharov, A. I. Effect of Neutron Irradiation and Plastic Deformation on Young's Modulus and Internal Friction 242
- Konobeyevskiy, S. T., and P. P. Butra. Radiographic Effects in Neutron-Irradiated Crystals 251
- Kolontsova, Ye. V. Radiation and Deformation Disturbances in Crystals 257
- Telegina, I. V., Ye. V. Kolontsova and V. V. Zubenka. Radiation Disturbances in Crystals of Lithium Fluoride 264
- Andronikashvili, E. L., N. G. Politov, and L. F. Vorozheykina. Effect of Lattice Disturbances on Mechanical and Optical Properties of Potassium Chloride Crystals. 268

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13217

S/020/62/147/003/017/027

B104/B186

AUTHORS: Kolontsova, Ye. V., Telegina, I. V.

TITLE: Radiation defects in quartz

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 3, 1962, 592 - 593

TEXT: This is mainly a review of the results in papers (published since 1956) on changes in the crystal structure caused by neutron bombardment. The intensification of the diffuse maxima of X-ray scattering under a neutron flux of up to 10^{19} n/cm² and the considerable changes of the diffraction pattern at a total flux of up to $7 \cdot 10^{19}$ n/cm² are discussed. These changes are: (a) a sixth-order axis of symmetry appears in the place of the third-order axis of symmetry that is characteristic of α -quartz; (b) a halo in the angular range between 6° and 17° is characteristic of the scattering of X-rays from an amorphous substance; (c) the field of interference is limited; (d) the intensity of the Laue patterns decreases, and that of the diffuse maxima increases. The causes of the intensification of the diffuse maxima are discussed. A possible rearrangement of the structure is inferred from the change of the symmetry. It is Card 1/2

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CIA-RDP86-00513R000823920013-3"

Radiation defects in quartz

S/020/62/147/003/017/027
B104/B186

not possible to conclude from these data whether a β -transition or a re-orientation according to the twinning law takes place. In twinning-law transitions amorphous regions can arise at the boundaries owing to the different densities of crystalline and amorphous quartz. $\alpha \rightarrow \beta$ transitions appear to be possible on neutron bombardment at low temperatures (100 - 200°C). The complete destruction of the crystal structure at a total flux of about $2 \cdot 10^{20}$ n/cm² is explained by the rupture of the covalent bonds when the mutual orientation of the Si-O tetrahedrons is disturbed. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: June 6, 1962, by G. V. Kurdyumov, Academician

SUBMITTED: May 29, 1962

Card 2/2

KOLONTSOVA, Ye. V.; KULYAVIK, A.

Effect of X rays on the structure of NaCl type crystals.
Kristallografiia 7 no.3:353-357 My-Je '62.

(MIRA 16:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

(Dielectrics, Effect of radiation on)
(X-ray crystallography)

S/070/63/008/002/003/017
E039/E435

AUTHORS: Zhdanov, G.S., Zubov, V.G., Kolontsova, Ye.Y.,
Osipova, L.P., Telegina, I.V.

TITLE: Radiation effects in α -quartz

PERIODICAL: Kristallografiya, v.8, no.2, 1963, 207-212

TEXT: A comparison of the Raman spectra of α -quartz before and after exposure to neutrons is carried out. The structural characteristics are obtained by the Laue method and the anomalous X-ray scattering method. The investigated sample is cut from a block of optical quality Brazilian quartz in the form of a cube 30 x 30 x 30 mm with the edges parallel to the principle axes and is subjected to a fast neutron flux of 7×10^{19} n/cm². This produces a change in density of the quartz from 2.65 to 2.49 g/cm³. The sample acquires an insignificant γ activity, a smoky violet color and the ability to fluoresce (max $\lambda = 5750 \text{ \AA}$). The main features of the spectrum of the irradiated α -quartz are: a) the spectrum is continuous up to 1500 cm⁻¹; b) it contains a number of blurred wide maxima; c) in the region 700 to 1500 cm⁻¹ the scattering is very similar in character to that of molten Card 1/2